

B.Sc. in Human Nutritional Sciences

Second Degree Program

Students must complete 60 credit hours while enrolled in the Second-Degree program. If any of the required courses have been completed in the previous degree, Free Electives must be chosen to meet the 60-credit hour UM residency requirement. Students are not required to satisfy the Written English requirement. Estimated time to completion based on prerequisites is 3 years.

Course No.	Course Name	Credit Hours
AGRI 2400 ¹	Experimental Methods in Agricultural and Food Sciences	3
BIOL 1410 ² or BIOL 1020 ² and BIOL 1030 ²	Anatomy of the Human Body or Biology 1: Principles and Themes and Biology 2: Biological Diversity, Function and Interactions	3 or 6
BIOL 1412 ²	Physiology of the Human Body	3
CHEM 1100	Introductory Chemistry 1: Atomic and Molecular Structure and Energetics	3
CHEM 1130 ³ or CHEM 1110	Introduction to Organic Chemistry or Introductory Chemistry 2: Interaction, Reactivity, and Chemical Properties	3
CHEM 2730/ MBIO 2730 ⁴	Elements of Biochemistry 1	3
CHEM 2740 ⁵	Introduction to the Biochemistry Laboratory	3
CHEM 2750/ MBIO 2750 ⁶	Elements of Biochemistry 2	3
HNSC 2140	Basic Principles of Human Nutrition	3
HNSC 2160	Principles of Food Preparation and Preservation	3
Total Credit Hours		30-33

Students must also complete one of the following concentrations: (A, B, or C):

A. Dietetics¹⁰

HNSC 3220	Food and Nutrition Literacy Education	3
HNSC 3300	Vitamins and Minerals in Human Health	3
HNSC 3310	Macronutrients and Human Health	3
HNSC 3342	Management for Food and Nutrition Professionals	3
HNSC 3400	Nutrition Assessment and Counselling	3
HNSC 4140	Quantity Food Production and Management	3
HNSC 4300	Community Nutrition Intervention	3
HNSC 4500	Clinical Nutrition II	3
HNSC 4550	Clinical Nutrition II	3
Free Elective(s) ^{2,7}		0-3
Total Credit Hours		27-30

B. Human Nutrition

HNSC 3220	Food and Nutrition Literacy Education	3
HNSC 3300	Vitamins and Minerals in Human Health	3
HNSC 3310	Macronutrients and Human Health	3
HNSC 4300 or HNSC 4500	Community Nutrition Intervention or Clinical Nutrition I	3

Note: Any discrepancies between this document and the Academic Calendar, the Academic Calendar takes precedent.

Restricted Electives ⁸		12
Free Electives ^{2,7}		3-6
Total Credit Hours		27-30
C. Foods		
HNSC 2150	Composition, Functional and Nutritional Properties of Foods	3
HNSC 3300 or HNSC 3310	Vitamins and Minerals in Human Health or Macronutrients and Human Health	3
HNSC 3260* or HNSC 4270*	Food Quality Evaluation or Sensory Evaluation of Food [offered in alternating years]	3
HNSC 3330	Ingredient Technology for Designed Foods	3
HNSC 3350	Culture and Food Patterns	3
HNSC 4290	Food, Nutrition and Health Policies	3
HNSC 4540	Functional Foods and Nutraceuticals	3
Program Elective ⁹		3
Free Electives ^{2,7}		3-6
Total Credit Hours		27-30

Notes:

1. STAT 2000 (Basic Statistical Analysis 2) can be substituted for AGRI 2400 (Experimental Methods in Agricultural and Food Sciences).
2. Students selecting BIOL 1020 and BIOL 1030 are not required to complete BIOL 1410. If BIOL 1020 and BIOL 1030 are taken, BIOL 1412 will be used towards Free Electives and the lower range of the total free electives required is applicable. Under required courses, students must take BIOL 1412 (Physiology of the Human Body) or students can substitute both BIOL 1410 and BIOL 1412 with both BIOL 2410 (Human Physiology 1) and BIOL 2420 (Human Physiology 2).
3. CHEM 2100 (Organic Chemistry 1: Foundations of Organic Chemistry) can be substituted for CHEM 1130 (Introduction to Organic Chemistry). If a student has both CHEM 2100 (Organic Chemistry 1: Foundations of Organic Chemistry) and CHEM 2110 (Organic Chemistry 2: Foundations of Organic Synthesis) they can substitute both for CHEM 1100 and CHEM 1130.
4. Under required courses, students can take either CHEM 2730/MBIO 2730 (Elements of Biochemistry 1) or CHEM 2700/MBIO 2700 (Biochemistry I: Biomolecules and an Introduction to Metabolic Energy).
5. Under required courses, students can take either CHEM 2740 (Introduction to the Biochemistry Laboratory) or CHEM 2720 (Principles and Practices of the Modern Biochemistry Laboratory).
6. Under required courses, students can take either CHEM 2750/MBIO 2750 (Elements of Biochemistry 2) or CHEM 2710/MBIO 2710 (Biochemistry 2: Catabolism, Synthesis, and Information Pathways).
7. Students may apply for the [Cooperative Education Program](#). Two work terms are required to graduate with Co-op designation. Co-op courses (3 credit hours each) are used towards Free Electives.
8. Restricted electives required in Option B: Human Nutrition can be either AGRI 2300 or any HNSC course at the 3000 or 4000 level not already required as part of the degree.
9. The Program Elective required in Option C: Foods can be from either the Asper School of Business (any level), OR any 3000 or 4000 level FOOD (Food Science) courses (note some FOOD courses are co-

taught with HNSC courses). Students must have the correct pre-requisites for the Program Elective and need to plan accordingly.

10. In order to meet Accreditation Canada/Equal Program Accreditation Standards, Second Degree students intending to apply for Dietetic Practicums also need to complete the following Dietetics Supporting Courses. Note that these courses can be used towards any free elective requirements:

- ABIZ 1000 or GMGT 1010
- HNSC 2000
- HNSC 2130 or HNSC 2150
- HNSC 3350
- HNSC 4100
- One of HNSC 4310* or HNSC 4340*
- FOOD 4150 or MBIO 1220 or MBIO 1010
- Psychology or Sociology (3-6 credit hours)

*These courses are usually offered every 2nd year - planning ahead is important.